

**CALIFORNIA ENERGY COMMISSION**1516 NINTH STREET  
SACRAMENTO, CA 95814-5512

STATE OF CALIFORNIA  
ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION

<b>In the Matter of:</b> SYCAMORE COGENERATION PROJECT  SYCAMORE COGENERATION COMPANY	) ) ) ) ) ) ) )	<b>Docket No. 84-AFC-6C</b> <b>Order No. 04-1201-03</b>  <b>ORDER APPROVING OPERATION IN</b> <b>EITHER COGENERATION OR SIMPLE</b> <b>CYCLE MODE, AND EXTENDING THE</b> <b>LICENSE TO OPERATE</b>
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## INTRODUCTION

Pursuant to Title 20, California Code of Regulations, section 1769(a), the Sycamore Cogeneration Company, the owner/operators of the Sycamore Cogeneration Project, filed a petition on August 17, 2004, seeking to modify operation of the project. The project owner has requested to operate two of the four turbines in either cogeneration or simple cycle mode and to eliminate the twenty-year expiration of the license. The modifications would allow the Sycamore Cogeneration Company to respond to the current electricity market and respond to a decline for steam demand from the adjacent oilfields.

## STAFF RECOMMENDATION

### A. Flexibility to Operate in Either Cogeneration or Simple Cycle Mode

The project owner has requested to operate two of the four turbines in either cogeneration or simple cycle mode. The project owner seeks the flexibility to operate in simple cycle mode because an unforeseen decline in steam demand since certification has reduced the need to operate in cogeneration mode. Market conditions, however, continue to support simple-cycle operation when needed to help meet peak demand.

As required by Title 20, California Code of Regulations, section 1769(a), the Energy Commission staff reviewed the petition to determine whether the proposed changes would significantly affect the environment, cause a change in a condition of certification, or cause the project not to comply with any applicable law, ordinance, regulation, or standard.

Based on its review, the staff concludes that the proposed changes will not cause a significant effect on the environment, and there is virtually no difference in emission impacts when changing from cogeneration to simple cycle mode. Staff concludes that the proposed changes to the conditions of certification would still ensure the project's compliance with all applicable laws, ordinances, regulations, and standards and recommends approval of the petition. The modifications are expected to be approved by the San Joaquin

Valley Air Pollution Control District in January 2005, and a revised Permit to Operate would be issued by the District at that time.

### B. Expiration of Certification

The Energy Commission's Decision for the Sycamore Cogeneration Project imposed the following condition of certification on the project: "Certification of the project, as considered during this proceeding, shall expire twenty years following commencement of firm operation, unless extended by act of this Commission or other entity with such authority." (Commission Decision, The Sycamore Cogeneration Project," December 10, 1986, pp. 38-39). Staff recommends that the Commission extend the Sycamore Cogeneration Project license indefinitely until such time that the project owner determines that it is no longer economically viable to operate the power plant.

Staff analyzed the merits of allowing the Sycamore Cogeneration Project to continue operation indefinitely. Staff's analysis shows that the project is needed to help offset the retirement of older gas-fired generating units, particularly from 2005 to 2008. According to the Energy Commission's Final Staff Report for the "California Summer 2004, Electricity Supply and Demand Outlook" (July 2004), the retirement of older gas-fired generating units is likely to diminish the state's reserve margins. According to the report, new generation should, thus, be added each year, particularly from 2005-2008, to maintain system reliability.

### COMMISSION FINDINGS

Based on staff's analysis, the Commission finds that:

- The proposed changes in the conditions of certification will not result in any significant impact to public health and safety or the environment;
- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards;
- The proposed changes will be beneficial to the project owner by allowing for operational flexibility and will be beneficial to the public by providing needed electrical generation;
- There has been a substantial change in both market conditions and steam demand since Energy Commission certification;
- The state has a need to add new generation and to avoid unnecessary retirement of power plants to maintain the reserve margin and system reliability; and
- In light of this need, the state has an interest in allowing the Sycamore Cogeneration Project to continue operation indefinitely to help maintain the reserve margin and system reliability.

## ORDER

### Approval of Operation in Either Cogeneration or Simple Cycle Mode

The California Energy Commission hereby adopts staff's recommendations and approves the following changes to the Sycamore Cogeneration Project's Decision.

### REVISIONS TO THE AIR QUALITY CONDITIONS OF CERTIFICATION

New text is underlined and deleted text is shown in ~~strikeout~~:

~~AQ-13 The Sycamore Project facility shall operate as a cogeneration facility pursuant to Public Resources Code Section 25134 for thermally enhanced oil recovery operations.~~

~~**Verification:** Sycamore Cogeneration Company shall maintain records on steam production as a portion of the operation log required in Condition AQ-11. The record shall include, but is not limited to hours of operation of the turbines and HRSGs, lb/hr of steam produced and temperature and pressure of steam produced.~~

#### **AQ-18**

- a. Start up or planned shut down of a CTG shall not exceed a time period of two (2) continuous hours.
- b. For all CTGs the following ~~hourly~~ emission limits shall apply during times of start up or ~~planned~~ shut down and shall be averaged over the time period specified below ~~two hour period allowed for start up or shut down:~~

NO<sub>2</sub> 140.0 lbm/hr (2-hour average)

CO 200 lbm/hr (1-hour average), and 140.0 lbm/hr (2-hour average)

**Verification:** Sycamore Cogeneration Company shall maintain records necessary to submit quarterly reports to show start up or planned shut down days and daily emissions for those days. This information shall be included in the quarterly reports already submitted to the CEC and SJVUAPCD.

~~**AQ-19** Pollutant emissions from each combustion turbine prior to being retrofitted with the DLN combustors shall not exceed the following limits, except during times of start up or shutdown, as defined in Condition AQ-18:~~

~~— Gas Fired Case:~~

~~— Particulates — 5.0 lbm/hr as PM<sub>10</sub>~~

~~— Sulfur Compounds — 0.5 lbm/hr as SO<sub>2</sub>~~

~~— 0.6 lbm/hr as SO<sub>4</sub>~~

~~— Oxides of Nitrogen — 140.0 lbm/hr as NO<sub>2</sub>~~

~~— Hydrocarbons — 2.5 lbm/hr (Non-meth)~~

~~— Carbon Monoxide — 392 lbm/day~~

Pollutant emissions from each ~~DLN~~-CTG shall not exceed the following limits, except during times of start up or shutdown, as defined in Condition AQ-18:

Gas Fired Case:

Particulates	- 5.0 lbm/hr as PM10 - 120.0 lbm/day as PM10
Sulfur Compounds	- <del>0.5</del> 0.9 lbm/hr as <u>SO<sub>x</sub> (as SO<sub>2</sub>)</u> <del>- 0.6 lbm/hr as SO<sub>4</sub></del>
Oxides of Nitrogen	- 1629.6 lbm/day and - 67.9 lbm/hr as NO <sub>2</sub> and 16.4 ppmv at 15% O <sub>2</sub> calculated on a 3 hour rolling average. <del>Not to exceed</del> 79.7 lbm/hr, <u>1-hour average.</u>
Hydrocarbons	- 2.5 lbm/hr (Non-methane)
Carbon Monoxide	- 1056 lbm/day and 25 ppmv at 15% O <sub>2</sub>

**Protocol:** For nitrogen dioxide, the Sycamore Cogeneration Company (SCC) shall identify the following for each day of operation, except during times of start up or shutdown, as defined in Condition AQ-18:

- (1) The daily maximum hourly mass emission rate (lbs/hr),
- (2) The daily maximum rolling 3-hour average mass emission rate (lbs/hr) and
- (3) The total daily mass emissions (lbs/day).

For carbon monoxide, SCC shall identify the total daily mass emissions (lbs/day) for each day of operation, except during times of start up or shutdown, as defined in Condition AQ-18.

For particulate matter (PM10), sulfur compounds (SO<sub>2</sub> and SO<sub>4</sub>) and non-methane hydrocarbons, SCC shall determine through the initial source test, the fuel-based emission factors (lbs/mmBtu) for each pollutant. Using these factors, SCC shall determine the maximum allowable fuel input rate (mmBtu/hr) that would comply with the above stated emission limits (lbs/hr) (i.e., emission limit / emission factor = fuel input rate). SCC shall then compare these fuel input rates (as determined above) with the actual daily maximum fuel input rate (mmBtu/hr) for each day of operation, except during times of start up or shutdown, as defined in Condition AQ-18.

SCC shall submit all excess emission reports and break down reports to demonstrate compliance with all concentration limits.

**Verification:** SCC shall submit quarterly emission reports with all the information identified in the above protocol to the CEC compliance project manager.

**AQ-30** Each CTG shall have a maximum heat input rate of ~~825~~ 1020 MMBtu/hr on an LHV basis. Firing rate limit can be increased upon SJVUAPCD-witnessed emission

sampling demonstration that compliance with emission sampling limits can be achieved at higher fuel consumption rates.

**Verification:** See verification for Condition AQ-8.

#### DELETION OF ENGINEERING CONDITIONS OF CERTIFICATION

Deleted text is shown in ~~strikeout~~:

The Commission Decision, Part III, Engineering Analysis, subsection A. Conformity with Cogeneration Criteria (Decision, pp. 43-44), Condition of Certification #1:

~~1. Over the lifetime of the project, the facility shall be operated as a cogenerating system in accordance with the definition of cogeneration contained in Public Resources Code sections 25134(a) and (b) and Title 18 CFR, sections 292.205(a)(1) and (2)(i)(B).~~

~~Verification: The Sycamore Cogeneration Company (SCC) shall file with the CEC during each calendar year an annual report in which monthly values of plant operating parameters will be set forth in copies of the following documents, with dollar amounts omitted:~~

- ~~a. monthly fuel use (includes quantity and BTU value) as evidenced by an invoice from the gas supplier(s).~~
- ~~b. monthly electrical sales (includes kWh) as evidenced by an invoice to the Southern California Edison Company. In addition, a monthly statement will be submitted for the amount of kilowatt hours that were used for station power and light and line losses.~~
- ~~c. monthly steam sales (includes quantity and BTU value) as evidenced by an invoice to Texaco Producing Inc.~~
- ~~d. if the rate of items a, b, or c above differs by more than  $\pm 5$ ,  $\pm 15$ , and  $\pm 10$  percent, respectively, from rated conditions, SCC (Applicant) will provide at the specific written request of the CEC staff an explanation of such anomaly.~~

#### **Extension of License by Order of the Commission**

Certification of the Sycamore Cogeneration Project is hereby extended such that it is no longer subject to any condition of certification requiring expiration within a specified period of time.

IT IS SO ORDERED.

Date:

STATE OF CALIFORNIA  
ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION

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/Original Signed/  
WILLIAM J. KEESE, Chairman